

WHAT IS CLAIMED IS:

1. A system, comprising:
  - 5 a distributed store comprising a primary state of session data configured for access by a plurality of application servers, wherein the session data comprises a plurality of attributes;
  - 10 a first one of the application servers comprising a client state of the session data, wherein the application server is configured to provide access to the session data to processes executing within the application server;
  - 15 wherein the system is configured to:
    - 15 compare the client state to a benchmark of the client state to determine a subset of the attributes that have been modified in the client state;
    - 20 and
    - 20 synchronize the primary state with the client state according to the subset of the attributes.
  - 25 2. The system as recited in claim 1, wherein the application server is configured to provide access to the session data for one or more client sessions of the system.
  - 30 3. The system as recited in claim 1, wherein, to compare the client state to a benchmark of the client state, the system is further configured to perform binary differencing of a binary representation of the client state and a binary representation of the benchmark of the client state to locate the modified attributes.

4. The system as recited in claim 1, wherein, to compare the client state to a benchmark of the client state, the system is further configured to perform object graph differencing of an object graph representation of the client state and an object graph representation of the benchmark of the client state.

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5. The system as recited in claim 1, wherein the first application server is configured to track accesses of the attributes of the client state, wherein the system is configured to:

10 compare the tracked accessed attributes to a benchmark of the attributes of the client state to determine a subset of the tracked accessed attributes that have been modified in the client state; and

15 synchronize the primary state with the client state according to the subset of the tracked accessed attributes.

6. The system as recited in claim 5, wherein, to track accesses of the attributes of the client state, the first application server is further configured to track only mutable attributes.

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7. The system as recited in claim 5, wherein, to track accesses of the attributes of the client state, the first application server is further configured to track only mutable accesses of the attributes of the client state, wherein mutable accesses comprise write accesses of any of the attributes of the client state.

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8. The system as recited in claim 5, wherein, to compare the tracked accessed attributes to a benchmark of the attributes of the client state, the system is further configured to perform binary differencing of a binary representation of the tracked accessed attributes and a binary representation of the benchmark of the attributes of the client state to locate the modified tracked accessed attributes.

9. The system as recited in claim 5, wherein, to compare the tracked accessed attributes to a benchmark of the attributes of the client state, the system is further configured to perform object graph differencing of an object graph representation of the 5 tracked accessed attributes and an object graph representation of the benchmark of the attributes of the client state to locate the modified tracked accessed attributes.

10. A system comprising:

10 a distributed store comprising a primary state of session data configured for access by a plurality of application servers, wherein the session data comprises a plurality of attributes;

15 a first one of the application servers comprising a client state of the session data, wherein the application server is configured to provide access to the session data to processes executing within the application server;

wherein the system is configured to:

20 determine a subset of the attributes of the session data that have been modified in the client state;

25 synchronize the primary state with the client state according the subset of the attributes that have been modified.

11. The system as recited in claim 10, wherein the application server is configured to provide access to the session data for one or more client sessions of the system.

30 12. The system as recited in claim 10, wherein, in said determining the subset

of the attributes of the session data, the system is further configured to perform binary differencing of a binary representation of the client state and a binary representation of the benchmark of the client state to locate the modified attributes.

5           13. The system as recited in claim 10, wherein, in said determining the subset of the attributes of the session data, the system is further configured to perform object graph differencing of an object graph representation of the client state and an object graph representation of the benchmark of the client state.

10          14. The system as recited in claim 10, wherein the first application server is configured to track accesses of the attributes of the client state, wherein the system is configured to:

15           determine a subset of the tracked accessed attributes that have been modified in the client state; and

              synchronize the primary state with the client state according to the subset of the tracked accessed attributes.

20          15. The system as recited in claim 14, wherein, to track accesses of the attributes of the client state, the first application server is further configured to track only mutable attributes.

25          16. The system as recited in claim 14, wherein, to track accesses of the attributes of the client state, the first application server is further configured to track only mutable accesses of the attributes of the client state, wherein mutable accesses comprise write accesses of any of the attributes of the client state.

30          17. The system as recited in claim 14, wherein, in said determining the subset of the tracked accessed attributes, the system is further configured to perform binary

differencing of a binary representation of the tracked accessed attributes and a binary representation of the benchmark of the attributes of the client state to locate the modified tracked accessed attributes.

5           18. The system as recited in claim 14, wherein, in said determining the subset of the tracked accessed attributes, the system is further configured to perform object graph differencing of an object graph representation of the tracked accessed attributes and an object graph representation of the benchmark of the attributes of the client state to locate the modified tracked accessed attributes.

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19. A system, comprising:

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a distributed store comprising a primary state of session data configured for access by a plurality of application servers, wherein the session data comprises a plurality of attributes;

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a first one of the application servers comprising a client state of the session data, wherein the first application server is configured to provide access to the session data to processes executing within the application server;

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means for determining a subset of the attributes of the session data that have been modified in the client state; and

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means for synchronize the primary state with the client state according to the subset of the attributes.

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20. The system as recited in claim 19, wherein said means for determining the subset of the attributes of the session data comprises means for performing a binary differencing of a binary representation of the client state and a binary representation of the benchmark of the client state to locate the modified attributes.

21. The system as recited in claim 19, wherein said means for determining the subset of the attributes of the session data comprises means for performing an object graph differencing of an object graph representation of the client state and an object graph representation of the benchmark of the client state to locate the modified attributes.

5 22. The system as recited in claim 19, further comprising:

10 means for tracking accesses of the attributes of the client state;

means for determining a subset of the tracked accessed attributes that have been modified in the client state; and

15 means for synchronizing the primary state with the client state according to the subset of the tracked accessed attributes.

23. The system as recited in claim 22, wherein means for tracking accesses of the attributes of the client state comprises means for tracking only mutable attributes.

20 24. The system as recited in claim 22, wherein means for tracking accesses of the attributes of the client state comprises means for tracking only mutable accesses of the attributes of the client state, wherein mutable accesses comprise write accesses of any of the attributes of the client state.

25 25. The system as recited in claim 22, wherein means for determining the subset of the tracked accessed attributes comprises means for performing binary differencing of a binary representation of the tracked accessed attributes and a binary representation of the benchmark of the attributes of the client state to locate the modified tracked accessed attributes.

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26. The system as recited in claim 22, wherein means for determining the subset of the tracked accessed attributes comprises means for performing object graph differencing of an object graph representation of the tracked accessed attributes and an object graph representation of the benchmark of the attributes of the client state to locate  
5 the modified tracked accessed attributes.

27. A method comprising:

10 determining a subset of attributes in a client state of session data on a first application server that have been modified, wherein the session data is accessible to one or more processes executing within the application server; and

15 synchronizing a primary state of session data on a distributed store with the client state according to the subset of the attributes, wherein the primary state is accessible by a plurality of application servers including the first application server.

28. The method as recited in claim 27, wherein said determining the subset of  
20 the attributes of the session data comprises performing a binary differencing of a binary representation of the client state and a binary representation of the benchmark of the client state to locate the modified attributes.

29. The system as recited in claim 27, wherein said determining the subset of  
25 the attributes of the session data comprises performing an object graph differencing of an object graph representation of the client state and an object graph representation of the benchmark of the client state.

30. The method as recited in claim 27, further comprising:

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the first application server tracking accesses of the attributes of the client state;  
determining a subset of the tracked accessed attributes that have been modified in  
the client state; and  
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synchronizing the primary state with the client state according to the subset of the  
tracked accessed attributes.

10 31. The method as recited in claim 30, wherein tracking accesses of the  
attributes of the client state comprises tracking only mutable attributes.

15 32. The method as recited in claim 30, wherein tracking accesses of the  
attributes of the client state comprises tracking only mutable accesses of the attributes of  
the client state, wherein mutable accesses comprise write accesses of any of the attributes  
of the client state.

20 33. The method as recited in claim 30, wherein said determining the subset of  
the tracked accessed attributes comprises performing binary differencing of a binary  
representation of the tracked accessed attributes and a binary representation of the  
benchmark of the attributes of the client state to locate the modified tracked accessed  
attributes.

25 34. The system as recited in claim 30, wherein said determining the subset of  
the tracked accessed attributes comprises performing an object graph differencing of an  
object graph representation of the tracked accessed attributes and an object graph  
representation of the benchmark of the attributes of the client state to locate the modified  
tracked accessed attributes.

30 35. An article of manufacture comprising software instructions executable to  
implement:

5                   determining a subset of attributes in a client state of session data on an first application server that have been modified, wherein the session data is accessible to one or more processes executing within the first application server; and

10                   synchronizing a primary state of session data on a distributed store with the client state according to the subset of the attributes, wherein the primary state is accessible by a plurality of application servers including the first application server.

15                   36. The article of manufacture as recited in claim 35, wherein said determining the subset of the attributes of the session data comprises performing a binary differencing of a binary representation of the client state and a binary representation of the benchmark of the client state to locate the modified attributes.

20                   37. The article of manufacture as recited in claim 35, wherein said determining the subset of the attributes of the session data comprises performing an object graph differencing of an object graph representation of the client state and an object graph representation of the benchmark of the client state.

38. The article of manufacture as recited in claim 35, wherein the software instructions are further executable to:

25                   the first application server tracking accesses of the attributes of the client state;

                         determining a subset of the tracked accessed attributes that have been modified in the client state; and

30                   synchronizing the primary state with the client state according to the subset of the

tracked accessed attributes.

39. The article of manufacture as recited in claim 38, wherein tracking accesses of the attributes of the client state comprises tracking only mutable attributes.

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40. The article of manufacture as recited in claim 38, wherein tracking accesses of the attributes of the client state comprises tracking only mutable accesses of the attributes of the client state, wherein mutable accesses comprise write accesses of any of the attributes of the client state.

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41. The article of manufacture as recited in claim 38, wherein said determining the subset of the tracked accessed attributes comprises performing binary differencing of a binary representation of the tracked accessed attributes and a binary representation of the benchmark of the attributes of the client state to locate the modified tracked accessed attributes.

42. The article of manufacture as recited in claim 38, wherein said determining the subset of the tracked accessed attributes comprises performing an object graph differencing of an object graph representation of the tracked accessed attributes and an object graph representation of the benchmark of the attributes of the client state to locate the modified tracked accessed attributes.